

CLAIMS:

1. A cooling system for providing cooling air for a motor having a shaft extending through an opening within the motor, the motor being contained within a vacuum cleaner

5 housing having a top and a bottom, the cooling system comprised of:

a cooling-air inlet located in a side of the vacuum cleaner housing;

a motor housing integral with the vacuum cleaner housing, the motor housing having a top portion defining a hole passing therethrough, the hole having a first dimension and being in flow communication with the cooling-air inlet;

10 a side wall surrounding the hole and extending from the top portion of the motor housing, thereby enabling the cooling air to flow from the motor housing through an interior of the side wall;

a baffle circumscribing the motor, the baffle having a second dimension that is greater than the first dimension enabling cooling air to pass through the opening in the motor along a
15 length of the motor aligned with the shaft of the motor with at least a portion of the motor positioned within the side wall; and

a cooling-air exhaust outlet located in the side of the vacuum cleaner housing in flow communication with the motor housing and spaced apart from and in flow communication with the cooling-air inlet.

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2. The cooling system of claim 1 wherein the air inlet extends generally parallel to the bottom along at least a partial length of the side of the vacuum cleaner housing.

9. The cooling system of claim 1 wherein the vacuum cleaner housing is comprised of an upper portion and a lower portion.

10. The cleaner cooling system of claim 9 wherein:

the upper portion includes a top part and a bottom part; and

the top part is circumscribed by a bottom edge in which the bottom edge extends beyond a top edge of the bottom part.

11. The cooling system of claim 10 wherein the bottom edge of the top part overhangs the top edge of the bottom part.

12. The cooling system of claim 10 wherein the bottom part of the top portion is the motor housing.

13. The cooling system of claim 9 wherein the lower portion is a collection canister.

14. The cooling system of claim 10 wherein the cooling-air exhaust outlet is formed by securing the top part of the upper portion to the bottom part of the upper portion.

15. The cooling system of claim 1 wherein the cooling-air exhaust outlet includes a bottom portion angled inwardly and in a direction toward the top of the vacuum cleaner housing.

16. The cooling system of claim 15 wherein the bottom portion forms a channel along the cooling-air exhaust outlet.

17. The cooling system of claim 15 wherein the bottom portion of the cooling-air air exhaust outlet is connected to the top portion of the motor housing.

18. The cooling system of claim 17 wherein the bottom portion of the cooling-air exhaust outlet is integral with the top portion of the motor housing.

19. The cooling system of claim 17 wherein the top portion of the motor housing separates the top part and the bottom part of the upper portion of the vacuum cleaner housing.

20. The cooling system of claim 16 wherein a plurality of spaced apart ribs are positioned along a length of the channel.

21. The cooling system of claim 1 wherein the cooling-air inlet includes a bottom portion angled inwardly and in a direction toward the top of the vacuum cleaner housing.

22. The cooling system of claim 10 wherein:

the bottom part of the upper portion is circumscribed by a bottom edge;

the lower portion of the vacuum cleaner is circumscribed by a top edge; and

the bottom edge extends outwardly beyond the top edge.

23. The cooling system of claim 22 wherein the bottom edge overhangs the top edge.

24. The cooling system of claim 22 wherein:

the lower portion of the vacuum cleaner housing has a sidewall;

5 the top edge of the lower portion is displaced inwardly of the side wall; and

the sidewall tapers inwardly toward the top edge, thereby forming the bottom surface of
the air inlet.

25. The cooling system of claim 24 wherein a portion of the sidewall tapers inwardly
10 toward the top edge forming a channel along the air inlet.